SHAKTI
SUSTAINABLE ENERGY
FOUNDATION

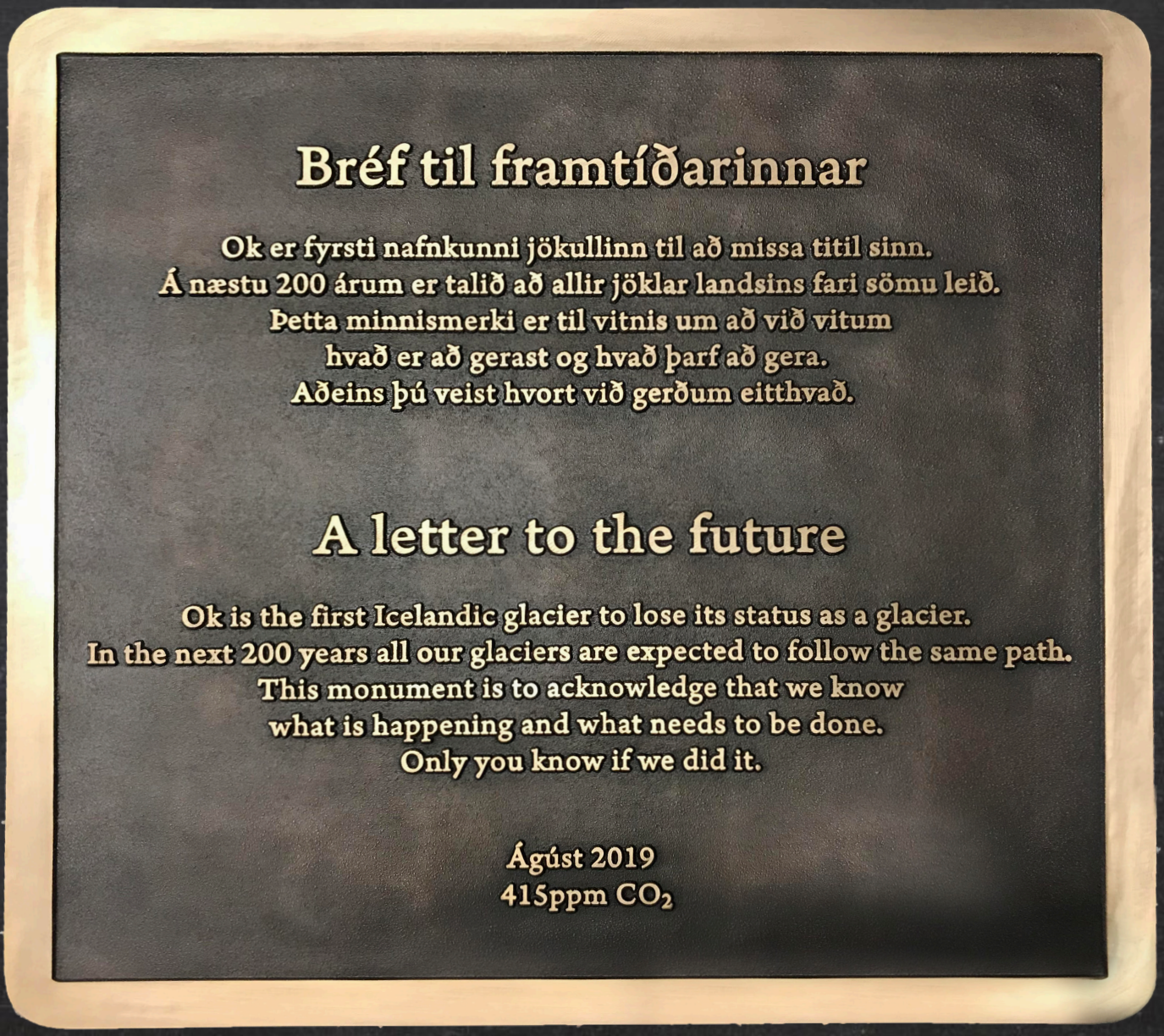
CEEW
THE COUNCIL

A Capacity Building Assessment Matrix for Enhanced Transparency in Climate Reporting

An India Assessment

Summary | September 2019

Sumit Prasad and Vaibhav Gupta



The memorial for the former glacier Okjökull.
Words by Andri Snær Magnason. Photo by Grétar Thorvaldsson/Málmsteypan Hella.

SHAKTI SUSTAINABLE ENERGY FOUNDATION

CEEW THE COUNCIL

A Capacity Building Assessment Matrix for Enhanced Transparency in Climate Reporting

An India Assessment

SUMIT PRASAD AND VAIBHAV GUPTA

Summary

September 2019

ceew.in

Suggested citation: Prasad, Sumit, and Vaibhav Gupta. 2019. *A Capacity Building Assessment Matrix for Enhanced Transparency in Climate Reporting: An India Assessment*. New Delhi: Council on Energy, Environment and Water.

Cover image: iStock

Peer reviewers: Elizabeth Gogoi, Senior Consultant, Oxford Policy Management India; Indrajit Bose, Senior Research Officer, Third World Network; Shikha Bhasin, Programme Lead, CEEW; and Karthik Ganesan, Research Fellow, CEEW

Publication team: Alina Sen (CEEW), Mihir Shah (CEEW), The Clean Copy, Aspire Design, and Friends Digital.

We would like to thank the Shakti Sustainable Energy Foundation for their support on this summary report.

Organisations: The **Council on Energy, Environment and Water** (ceew.in) is one of South Asia's leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain and change the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions and engages with the wider public. In 2019, CEEW has once again been featured across nine categories in the *2018 Global Go To Think Tank Index Report*. It has also been consistently ranked among the world's top climate change think tanks. Follow us on Twitter @CEEWIndia for the latest updates.

Shakti Sustainable Energy Foundation works to strengthen the energy security of the country by aiding the design and implementation of policies that encourage energy efficiency, renewable energy and sustainable transport solutions, with an emphasis on sub-sectors with the most energy saving potential. Working together with policy makers, civil society, academia, industry and other partners, we take concerted action to help chart out a sustainable energy future for India (www.shaktifoundation.in).

Council on Energy, Environment and Water
Sanskrit Bhawan, A-10, Qutab Institutional Area
Aruna Asaf Ali Marg, New Delhi - 110067, India

About CEEW

The Council on Energy, Environment and Water (CEEW) is one of South Asia's leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain – and change – the use, reuse, and misuse of resources. The Council addresses pressing global challenges through an integrated and internationally focused approach. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions, and engages with the wider public.

In 2019, CEEW once again featured extensively across nine categories in the 2018 Global Go To Think Tank Index Report, including being ranked as South Asia's top think tank (15th globally) with an annual operating budget of less than USD 5 million for the sixth year in a row. CEEW has also been ranked as South Asia's top energy and resource policy think tank in these rankings. In 2016, CEEW was ranked 2nd in India, 4th outside Europe and North America, and 20th globally out of 240 think tanks as per the ICCG Climate Think Tank's standardised rankings.

In nine years of operations, The Council has engaged in over 230 research projects, published over 160 peer-reviewed books, policy reports and papers, advised governments around the world nearly 530 times, engaged with industry to encourage investments in clean technologies and improve efficiency in resource use, promoted bilateral and multilateral initiatives between governments on 80 occasions, helped state governments with water and irrigation reforms, and organised nearly 300 seminars and conferences.

The Council's major projects on energy policy include India's largest multidimensional energy access survey (ACCESS); the first independent assessment of India's solar mission; the Clean Energy Access Network (CLEAN) of hundreds of decentralised clean energy firms; the CEEW Centre for Energy Finance; India's green industrial policy; the USD 125 million India-U.S. Joint Clean Energy R&D Centers; developing the strategy for and supporting activities related to the International Solar Alliance; designing the Common Risk Mitigation Mechanism (CRMM); modelling long-term energy scenarios; energy subsidies reform; energy storage technologies; India's 2030 Renewable Energy Roadmap; energy efficiency measures for MSMEs; clean energy subsidies (for the Rio+20 Summit); Energy Horizons; clean energy innovations for rural economies; community energy; scaling up rooftop solar; and renewable energy jobs, finance and skills.

The Council's major projects on climate, environment and resource security include advising and contributing to climate negotiations in Paris (COP-21), especially on the formulating guidelines of the Paris Agreement rule-book; pathways for achieving NDCs and mid-century strategies for decarbonisation; assessing global climate risks; heat-health action plans for Indian cities; assessing India's adaptation gap; low-carbon rural development; environmental clearances; modelling HFC emissions; the business case for phasing down HFCs; assessing India's critical minerals; geoengineering governance; climate finance; nuclear power and low-carbon pathways; electric rail transport; monitoring air quality; the business case for energy efficiency and emissions reductions; India's first report on global governance, submitted to the National Security Adviser; foreign policy implications for resource security; India's power sector reforms; zero budget natural farming; resource nexus, and strategic industries and technologies; and the Maharashtra-Guangdong partnership on sustainability.

The Council's major projects on water governance and security include the 584-page National Water Resources Framework Study for India's 12th Five Year Plan; irrigation reform for Bihar; Swachh Bharat; supporting India's National Water Mission; collective action for water security; mapping India's traditional water bodies; modelling water-energy nexus; circular economy of water; participatory irrigation management in South Asia; domestic water conflicts; modelling decision making at the basin-level; rainwater harvesting; and multi-stakeholder initiatives for urban water management.

Acknowledgments

The authors would like to thank the Shakti Sustainable Energy Foundation (SSEF) for their support to carry out the study.

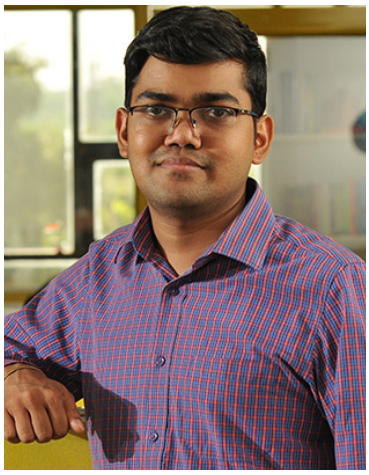
We also thank our reviewers – Elizabeth Gogoi, Oxford Policy Management India; Indrajit Bose, Third World Network; Shikha Bhasin, CEEW; and Karthik Ganesan, CEEW, for their critical comments and feedback that helped us improve the summary.

We thank participants of the stakeholder consultations we conducted in the course of finalising this issue brief – Sumana Bhattacharya, IORA Ecological Solutions Pvt. Ltd; Joydeep Gupta, The Third Pole, India Climate Dialogue; Ulka Kelkar, World Resources Institute (WRI); Subrata Chakrabarty, WRI; Elizabeth Gogoi, Oxford Policy Management India; Damandeep Singh, CDP (formerly Carbon Disclosure Project); and Aman Gupta, Shakti Sustainable Energy Foundation, for their valuable suggestions.

We also thank our colleagues at CEEW who provided valuable inputs throughout the process - Shanal Pradhan and Kritika Gulati (former intern at CEEW).

Finally, we thank the outreach team at CEEW, especially Alina Sen (communications specialist), who provided constant support during the publication stage and pushed us to adhere to the highest standards of publication.

The authors



Sumit Prasad
sumit.prasad@ceew.in

Sumit is a policy researcher at the Council on Energy, Environment and Water. His research revolves around climate negotiations and governance where he addresses issues related to the enhanced transparency framework under the Paris Agreement, the measuring, reporting and verification (MRV) arrangement for climate actions, and associated capacity building aspects. Sumit holds an MBA in Business Sustainability from TERI SAS, New Delhi and an undergraduate degree in Electronics and Communication from the National Institute of Engineering, Mysore.

"Transparency is central to climate negotiations. It strengthens nations' trust in the UN process and promotes ambitious climate action. This study proposes an assessment tool with the help of which developing countries can identify their capacity constraints towards adopting the enhanced transparency framework under the Paris Agreement and avail flexibilities in rational manner."

Vaibhav Gupta
ism.vaibhav@gmail.com

Vaibhav, earlier with CEEW, is an environmental engineer and policy specialist, who examines and analyses the Industry sector via the lens of climate change, energy and resource efficiency. Principles of circular economy and industrial symbiosis are his major research interests. An objective researcher, he is proficient in developing research frameworks, data driven analytics, and project management. Some of his research accomplishments include – development of a critical minerals resource framework for India's manufacturing sector; identification of strategic industries for Make in India; compiling energy and carbon emissions' inventory of India's manufacturing sector; and critical analysis of international climate governance from the perspective of India's capacity building for enhanced transparency in climate reporting. He holds a master's degree in environmental engineering from the Indian Institute of Technology (Indian School of Mines), Dhanbad.

"Climate change is a grave concern which becomes even more complex with governance and political challenges across economies. Capacity building of the developing world is of paramount importance to exhibit transparency in progress and outcomes and is critical to demonstrate mutual trust. This study provides an objective approach towards building the monitoring and reporting capacity of developing countries and measuring and tracking their progress against existing and emerging climate actions. I firmly believe that developing countries and the UNFCCC Secretariat would be able to derive immense value out of such research."

Contents

Tables

Figures

Abbreviations

ACB-CT	area of capacity building for climate transparency
ADB	Asian Development Bank
AF	Adaptation Fund
BEE	Bureau of Energy Efficiency
BURs	Biennial Update Reports
CBAM	Capacity Building Assessment Matrix
CBDR-RC	Common but Differentiated Responsibility and Respective Capabilities
CBIT	Capacity-building Initiative for Transparency
CDM	Clean Development Mechanism
CERs	Certified emission reductions
CGE	Consultative Group of Experts
CMMACS	Centre for Mathematical Modelling and Computer Simulations
COP	Conference of the Parties
CSIR	Council for Scientific and Industrial Research
EESL	Energy Efficiency Services Limited
GCF	Green Climate Fund
GCOS	Global climate change observing systems
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
IC	institutional capacity
ICA	international consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
ISRO	Indian Space Research Organisation
ITMOs	Internationally transferred mitigation outcomes
KC	knowledge capacity
LULUCF	land use, land-use change, and forestry
M&E	monitoring and evaluation
MoEFCC	Ministry of Environment, Forest and Climate Change
MRV	measuring, reporting and verification
NAMAs	Nationally Appropriate Mitigation Actions
NAPCC	National Action Plan for Climate Change
NATCOM	National Communications
NCs	National circumstances
NDC	Nationally determined contributions
NEERI	National Environmental Engineering Research Institute
NIMS	National Inventory Management System
NIO	National Institute of Oceanography
NMSKCC	National Mission on Strategic Knowledge for Climate Change
NPL	National Physical Laboratory
PC	procedural capacity
QA	quality assurance
QC	quality control
SAPCC	State Action Plans on Climate Change
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
V&A	vulnerability and adaptation

1. Abstract

As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), India is obliged to communicate the outcomes of its climate action, at the least, in the form of national communications or biennial update reports to the UNFCCC and at other international fora. This is essential to demonstrate the nation's low carbon development efforts to the global community as well as to determine the outcomes of its domestic actions.

So far, the Government of India has made considerable efforts to adhere to its reporting obligations, and has submitted four communications (two national communications and two biennial update reports) to the UNFCCC. But there is considerable scope for improvement, and India needs additional support to address its capacity constraints. Moreover, with the adoption of the enhanced transparency framework as per the Paris Agreement, the Convention now demands more granular and accurate data to be reported in a timely manner compared to before. Hence, it is important for India to not only bridge its present capacity gaps, but also to ensure that the domestic arrangements are appropriate and suitable for meeting the newer reporting requirements under the Paris Agreement.

In this study, The Council has analysed India's capacity building efforts related to climate transparency. The study identifies the areas where India has built its capacity as well as the capacity areas where critical interventions are needed.

2. Background

As a signatory to the UNFCCC, India is obligated to report its climate actions through National Communications (NATCOMs) and Biennial Update Reports (BURs) (UNFCCC, 2007). Adhering to these reporting obligations is essential for India to showcase its climate leadership – these reports demonstrate the nation's low-carbon development efforts to the wider global community and describe the domestic impacts of climate change. Realising the importance of these communications, the Government of India has made considerable efforts towards these communications and submissions.

The Government of India instituted National Communication (NATCOM) Cell to act as a focal point for the climate transparency process within the Ministry of

Government of India has made considerable efforts to adhere to its reporting obligations and has submitted two national communications and two biennial update reports to the UNFCCC

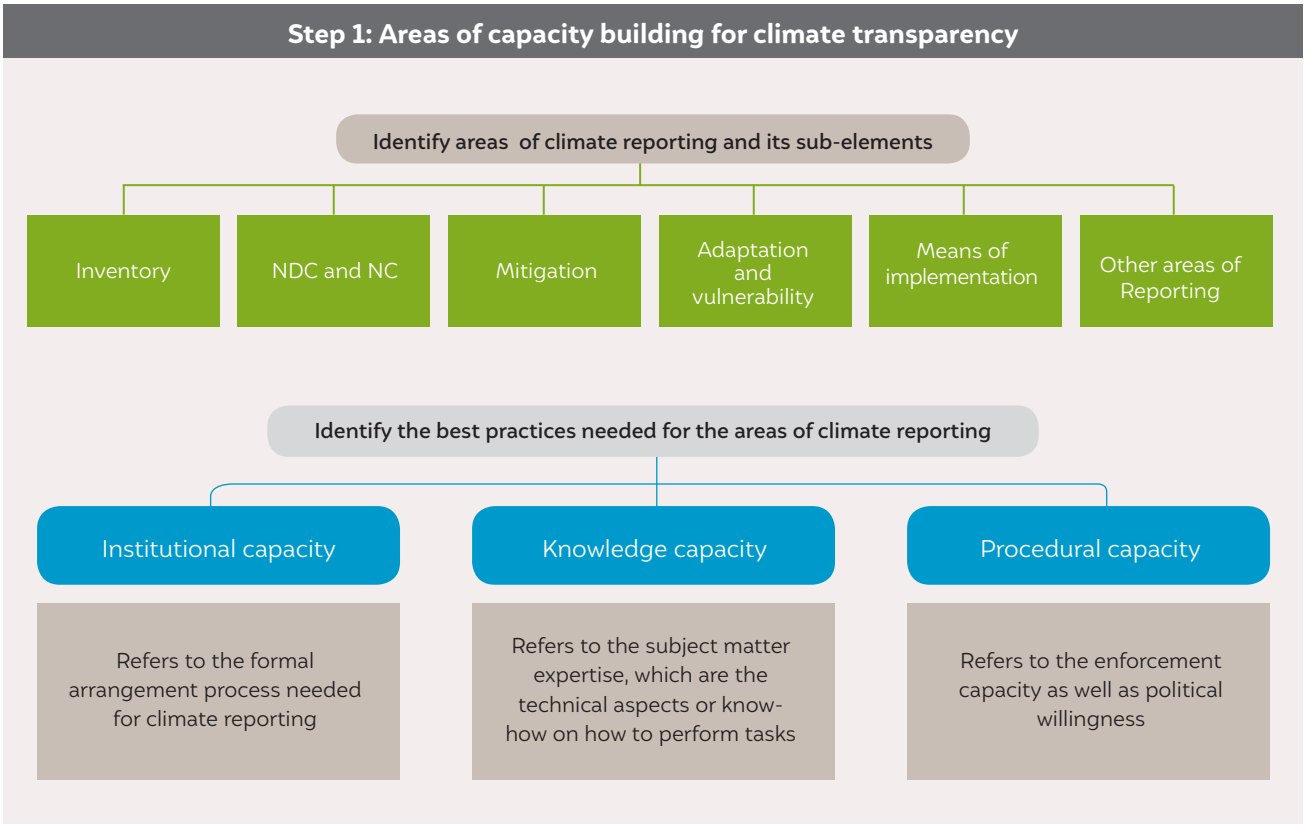
Environment Forest and Climate Change. The NATCOM cell coordinates with a network of institutions at almost every level of governance for climate reporting (GoI, 2018). This is because most institutions responsible for climate actions and reporting are spread across the country and are governed by different ministries. Also, transparency reports are subject to domestic expert review processes via extensive stakeholder consultations before presenting the outcomes of climate actions at the negotiation forum. This process is designed to lend credibility to the international (external-facing) reporting (GoI, 2012; GoI, 2018).

In December 2018, at the Conference of the Parties (COP) 24, a new enhanced transparency regime was adopted (UNFCCC, 2019 (a)). With this, transparency guidelines for all Parties moved from till-then differentiation between developed and developing countries, to a common reporting and review format. This means that developing countries which are signatory to the Paris Agreement, including India, are obligated to report more granular and accurate data in a timely manner with more stringent conditions than before[1]. Though India has the flexibility to adhere to these reporting obligations, in so far as its capacity allows, such disclosure would push India to strengthen its existing domestic institutions that regularly track and monitor climate data. Hence, it is important for India to identify the areas that require capacity enhancement and strategically avail international support for them.

So far, India has submitted four communications – two NATCOMs and two BURs – to UNFCCC and is in the process of preparing its third NATCOM (UNFCCC, 2019(c); UNFCCC, 2019(d)). While the efforts made to formulate these transparency communications is commendable, there is still a need for incremental progress towards enhancing various aspects of climate reporting to build trust and confidence amongst negotiating Parties. These aspects include completeness

1 For a summary on the comparative requirements before, and after COP24, imposed on Parties, please see, *A Capacity Building Assessment Matrix for Enhanced Transparency in Climate Reporting: A Comprehensive Evaluation of Indian Efforts.*

Figure 1: Block diagram of Capacity Building Assessment Matrix (CBAM)



Source: Authors' analysis

of climate report, presence of specific and accurate information, comparability of reported information, adherence to timeliness, and so on[2]. These submissions act as authoritative sources of information, providing bonafide information for assessing domestic strategies', tracking support and its impacts, to enable stronger climate actions within the country.

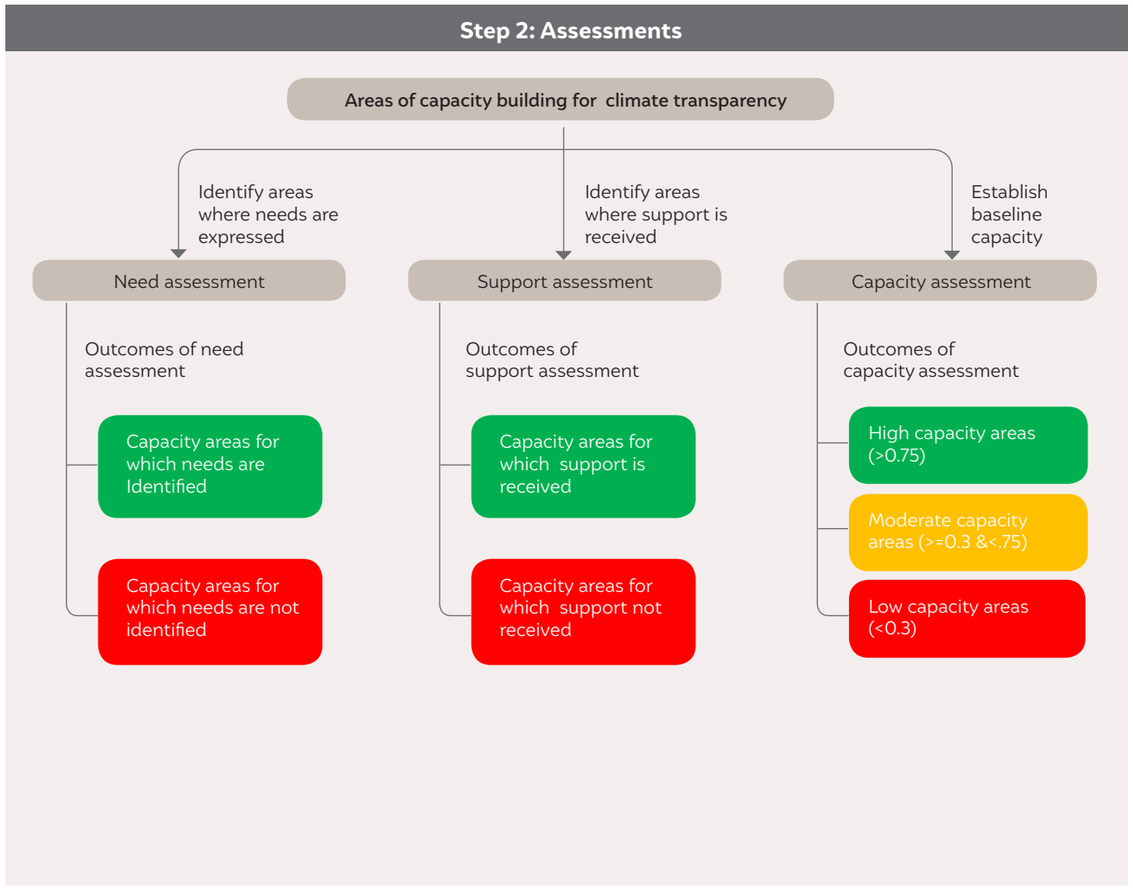
In order to assist developing countries in making a smooth transition towards meeting these enhanced transparency mandates, the Council on Energy, Environment and Water (The Council) has developed an assessment tool – the Capacity Building Assessment Matrix (CBAM). It primarily supports identifying current national capacity gaps and analysing opportunities for enhancing transparency within countries. It also identifies the challenges that stem from a lack of support and capacity retention. The assessment tool defines the area of capacity building for climate transparency (ACB-CT), under the caveats of institutional, knowledge, and procedural capacity, across various areas of reporting, which are inventory, national determined contribution (NDC) and national circumstances (NC), mitigation, adaptation and vulnerability, support, and others. Each element within ACB-CT is termed as a capacity indicator.

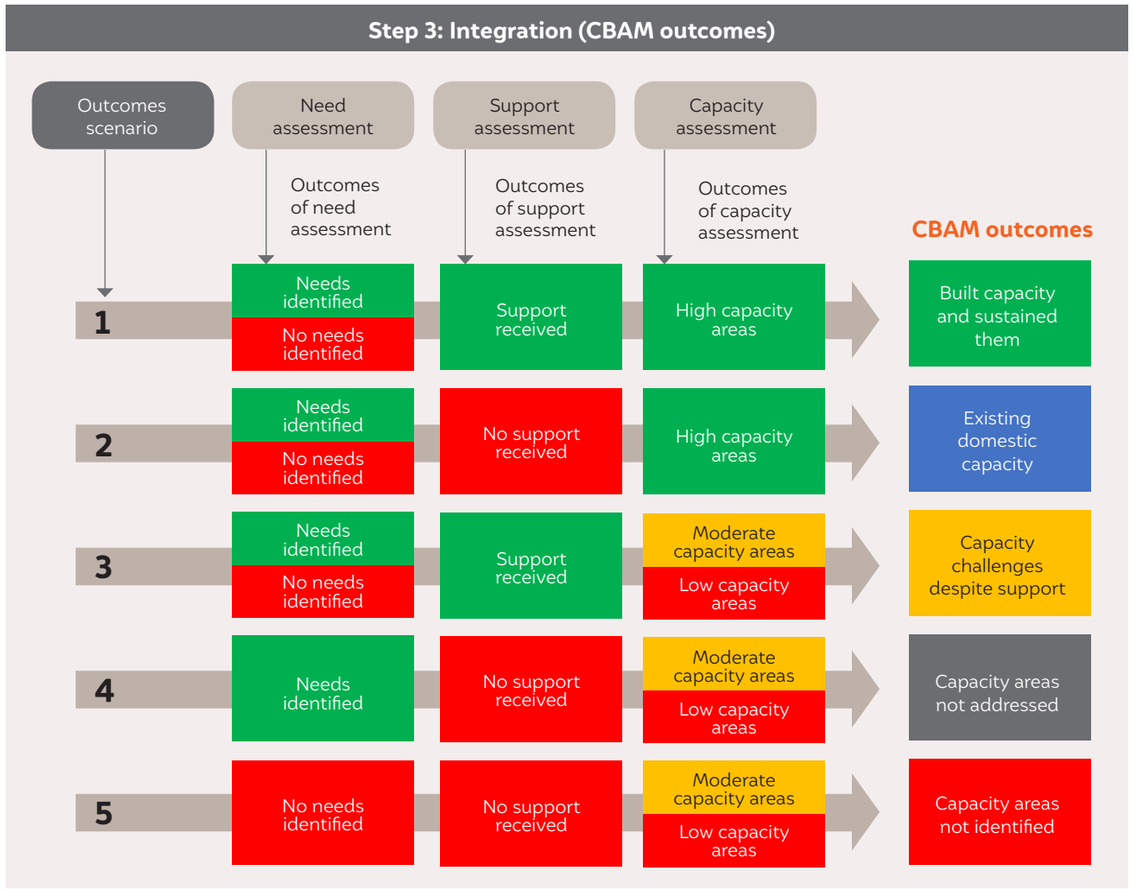
Further, there are three assessments for each indicator of ACB-CT to help ascertain the current, required, and internationally-fulfilled capacities within countries: Capacity assessment (establishes baseline capacity against the indicators); Need assessment (identify capacity indicators against which needs are expressed); and Support assessment (identify capacity indicator for which support is received). A separate, in-depth publication on this tool and methodology is presented in Capacity Building Assessment Matrix, and the authors advise the reader to peruse the methodology document before looking at the outcome of the assessment for India.

Figure 1 showcases a step-by-step procedure in the form of a block diagram for CBAM. The Council has used this assessment tool to undertake a detailed analysis of India's capacity building efforts related to climate transparency. This analysis is presented below.

In addition, there is a consolidated report titled *A Capacity Building Assessment Matrix for Enhanced Transparency in Climate Reporting: A Comprehensive Evaluation of Indian Efforts*.

2 Ensure adherence to TACCC principles: Transparency, Accuracy, Completeness, Comparability, Consistency.



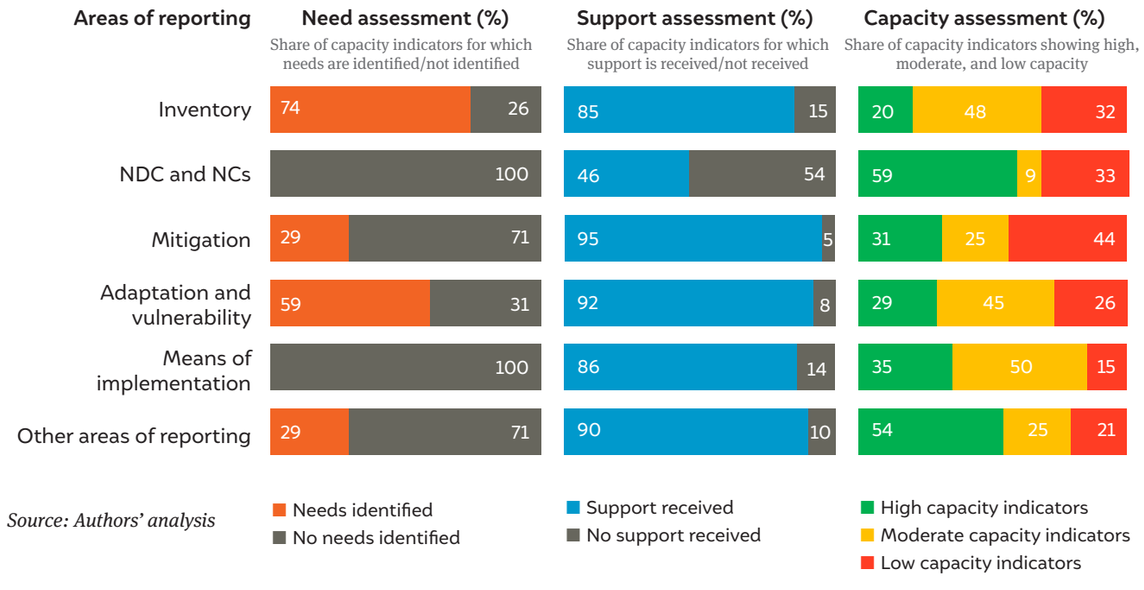


Note: In the later section, each CBAM outcome follows the colour theme as assigned in this figure.

To establish India's present baseline capacity, we analysed the literature available in the public domain and also had focus group discussions with subject experts at CEEW. The literature includes the four communications (two national communications and two biennial update reports) submitted by India to UNFCCC, India's NDC, and government documents. To understand India's capacity needs, we analysed the needs and requirements expressed as such by the Government in all four communications submitted to the UNFCCC, while to assess the support received by India to build and optimize its capacity, we analysed NATCOM projects supported by the Global Environment Facility (GEF), transparency projects under capacity building portal (UNFCCC), and United Nations Development Programme (UNDP) database and other bilateral channels.

Figure 2 showcases the outcomes of three assessment for India. It is evident from the need assessment that enhancing inventory (74 percent) and adaptation (59 percent) reporting were major stated needs. In contrast, about 85-95 per cent of capacity indicators received support for most areas of reporting, except for NDC and NC. This is because the support activities and outcomes for most projects were stated broadly and relate to multiple capacity indicators. These projects received indicative financial support of USD 74.7 million to strengthen institutional, knowledge, and procedural capacity for climate reporting; USD 42 million from this amount went towards preparing three NATCOMs. Also, the distribution of high-, moderate-, and low-capacity indicators is not uniform, reflecting the disjointed nature of capacity associated with each area of reporting.

Figure 2: Outcomes of need, support, and capacity assessment for India



Source: Authors' analysis

3. Capacity associated with inventory reporting

Institutional capacity: The present approach towards inventory reporting is project-oriented in India; there is no focus on defining the roles and responsibilities in a formal legal arrangement, associated with the inventory preparation process. This is important to ensure a continuous reporting process. Also, it is necessary to strengthen formal arrangements in order to deal with the sharing of restricted or confidential data, timely reporting of data, and conversion of raw data to useful inventory data.

Knowledge capacity: There is sound knowledge on IPCC Guidelines within institutions in India. However, there are challenges with regards to the retention of knowledge capacity to undertake key category analysis, uncertainty analysis, quality assurance (QA) and quality control (QC) procedures, and other parameters such as timeseries and recalculation. These challenges are a result of project-oriented ways of functioning and the lack of templates for knowledge transfer[3]. Templates act as building blocks for internalising the reporting process. They ensure an efficient system that can identify priorities for future improvement, standardise tasks, and serve as a manual and a starting point for future inventory teams.

Procedural capacity: Although there is an overall understanding of sectoral emissions, there is little clarity on emissions at the sub-sectoral level, especially within industrial processes and waste sectors, which comprise of about 10-12 percent of India's emissions portfolio. There is sound reporting on activity data and its updating capacity. However, we observe challenges in the adoption of higher emission factors and its regular upgradation (as well as updation) in most sectors – with the exception of LULUCF and energy (power) sectors, where moderate capacity can be observed.

Key highlights of CBAM outcomes for inventory (Table 1)

Capacity area not identified

- **Institutional capacity:** Formal arrangement in the form of defined roles and responsibilities associated with inventory preparation
- **Procedural capacity:** Reporting for other sections (memo items)

Capacity challenges despite support (low capacity)

- **Institutional capacity:** Dealing with confidential data, staff retention policy
- **Procedural capacity:** Disaggregated levels – sub-sector disclosure for most of the sectors, use of higher tiers of emission (all sector except LULUCF and energy (power)) and coverage of other gases (NOx, CO, NMVOC, SO_2), N_2O, and NF_3 emissions – industrial processes

Capacity challenges despite support (moderate capacity)

- **Institutional capacity:** Formal procedures for timely reporting and sharing of data
- **Knowledge capacity:** Use of tools and templates (internalise reporting process); IPCC 2006 Guidelines
- **Procedural capacity:** Use of higher tiers of emissions (for LULUCF) and coverage of other gases (NOx, CO, NMVOC, SO_2) for all sectors; coverage of F gases (HFCs, PFCs, SF_6) for industrial processes

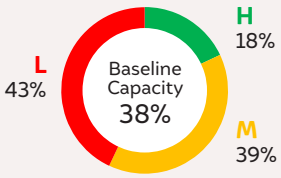
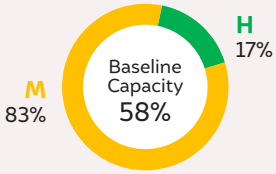
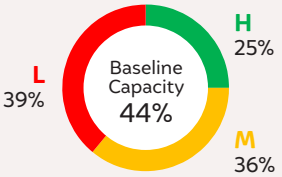
Built capacity and sustained them

- **Institutional capacity:** National coordinating body (NATCOM cell)
- **Knowledge capacity:** Awareness of IPCC Guidelines (1996, GPG)
- **Procedural capacity:** Activity data updation and coverage of major gases (CO_2, CH_4, N_2O) for most of the sectors

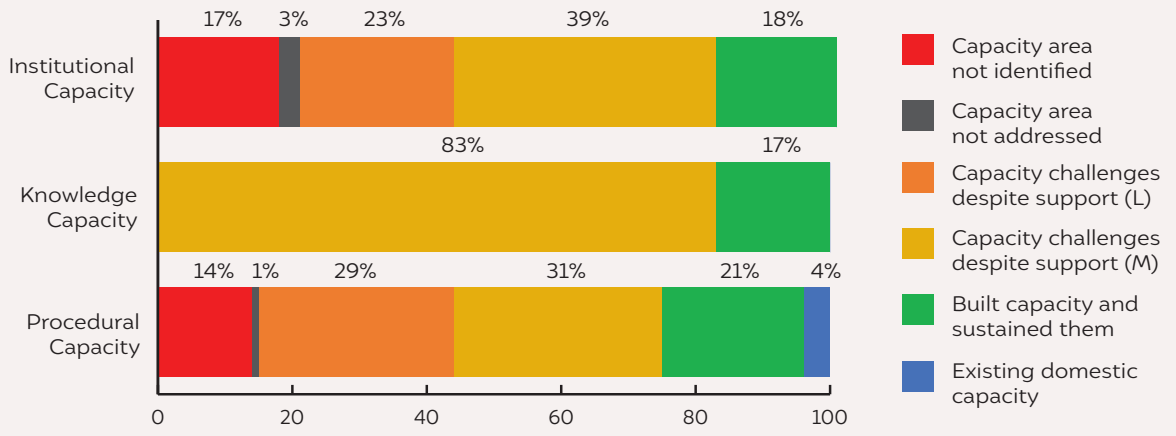
3 Templates for following aspects: institutional arrangements (IA); methods and data documentation (MDD); quality assurance and quality control (QA/QC) procedures; archiving system (AS); key category analysis (KCA); national inventory improvement plan (NIIP).

Image: iStock

Table 1: Assessments and CBAM outcomes for inventory

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of capacity indicators showing high, moderate, and low capacity	**Needs assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional capacity		63%	80%
Knowledge capacity		100%	100%
Procedural capacity		75%	81%

CBAM outcomes



Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

4. Capacity associated with Nationally Determined Contribution and National Circumstances

Institutional and knowledge capacity: India has established the Prime Minister's Council on Climate Change (PMCCC) to coordinate national-level responses to climate change, oversee the formulation of action plans, and monitor key policy decisions. It showcases the strong political will at the national level to ensure implementation of required climate actions. However, there are some challenges in strengthening the same processes at a state level, and aligning these with India's NDC at the national level. This is because the present guidelines for the State Action Plan on Climate Change (SAPCC) are rather broad and shy away from establishing any synchronisation of state and national goals.

Procedural capacity: There is a comprehensive reporting on national circumstances because of the existing domestic institutional capacity, as most relevant Ministries report annually on their performance. In addition, India has been reporting on its NDC progress without any international support. Moving forward, however, a more detailed reporting for NDC progress will be necessary, as India is required to report on the level of uncertainty associated with the NDC's progress and projection of emissions.

Key highlights of CBAM outcomes for NDC and NC (Table 2)

Capacity area not identified

- **Institutional and knowledge capacity:** Approaches to track NDC progress (sensitivity analysis)
- **Procedural capacity:** Disclosure on the use of market mechanisms to achieve NDC

Capacity challenges despite support (low capacity)

- **Procedural capacity:** Projection of NDC with and without commitment, and sectoral analysis of projections

Capacity challenges despite support (Moderate capacity)

- **Institutional and knowledge capacity:** Establishment/strengthening of national legal (formal) arrangements for NDCs (states vs federal)
- **Procedural capacity:** National Circumstances – sectoral information on industry, waste, building stocks, and urban structure

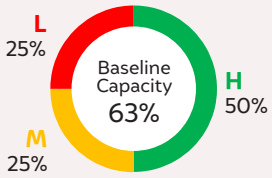
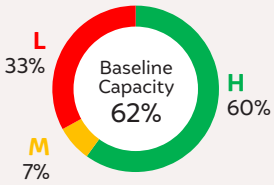
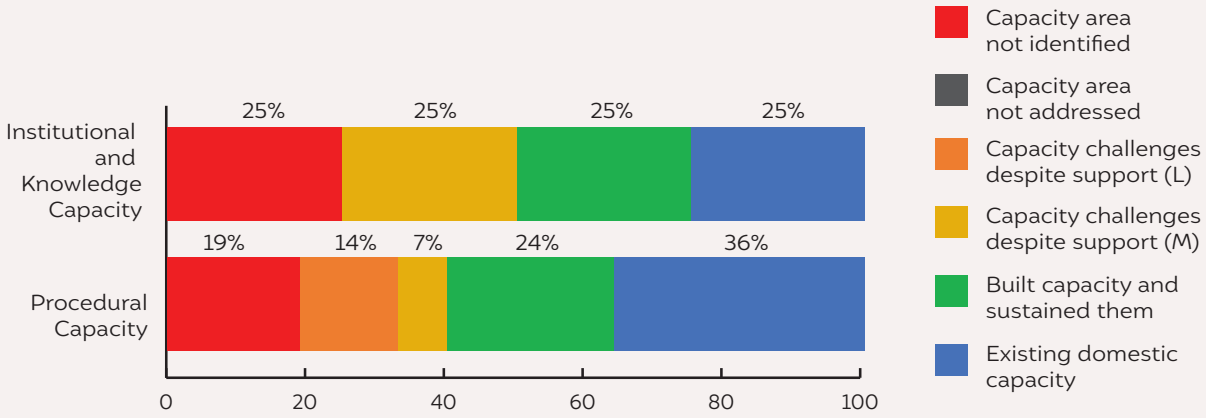
Built capacity and sustained them

- **Institutional and knowledge capacity:** Stakeholder engagement process
- **Procedural capacity:** National Circumstances – general (government structure, demographic, geographic, climate, and economic profile) and sectoral information (energy, transportation, agriculture, and forest)

Existing domestic capacity

- **Institutional and knowledge capacity:** Strong leadership – ministerial-level committee (PMCCC)
- **Procedural capacity:** NDC description – clearly defined goals, conditional and unconditional component and policies and programmes. NDC progress – quantified and qualified progress and linkages of NDC with socioeconomic indicators

Table 2: Assessments and CBAM outcomes for NDC and NC

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of indicators showing high, moderate, and low capacity	**Needs assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional and knowledge capacity		0%	50%
Procedural capacity		0%	45%
CBAM outcomes			
			

Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

5. Capacity associated with mitigation reporting

Institutional capacity: A sound governance system already exists within the domestic legal framework, as most of the ministries report annually on their programmes and actions. However, measuring reporting and verification (MRV) capacity for mitigation actions is limited. Hence, some effort should go towards enhancing coordination and strengthening institutional arrangements by formulating an integrated MRV system.

Knowledge capacity: There is little to no knowledge capacity in the area of mitigation assessment (modelling exercises). Though there are independent research institutes that do have modelling capacities for a few sectors, there is little clarity on whether there is any capacity within government institutions to undertake modelling exercises.

Procedural capacity: Since India has not submitted or rolled out any nationally appropriate mitigation actions (NAMAs), there is currently no required reporting in this area. Also, there are no disclosures on the outcomes of mitigation assessments, and how these affect emissions as compared to a business-as-usual scenario. However, some ministries via their departments (such as Ministry of Power via BEE and EESL) report on their programmes and policies, as a result of which there is some useful domestic reporting on the progress in mitigation actions.

Key highlights of CBAM outcomes for mitigation (Table 3)

Capacity area not identified

- **Institutional capacity:** Formal procedures for budgetary or technology support

Capacity area not addressed

- **Institutional capacity:** Formal arrangements to include all relevant institutions and formal procedures for mitigation assessment

Capacity challenges despite support (low capacity)

- **Institutional capacity:** Establishing and strengthening MRV arrangement; integration of NIMS, NAMAs, and MRV
- **Knowledge capacity:** Procedures to undertake mitigation assessment, knowledge of modelling tools, and knowledge of templates for MRV
- **Procedural capacity:** Outcomes of mitigation assessments and NAMAs; avoidance of double counting of CDM

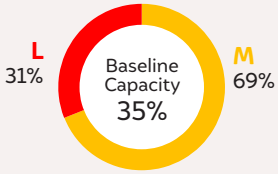
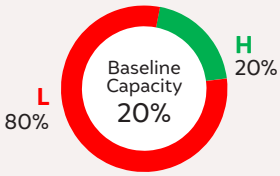
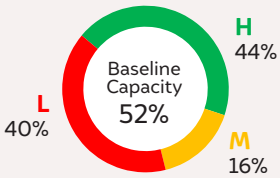
Capacity challenges despite support (moderate capacity)

- **Institutional capacity:** Formal procedures for timely reporting, data collection, archiving, and verification processes
- **Procedural capacity:** Outcomes of short-term assessments and the cost associated with mitigation actions

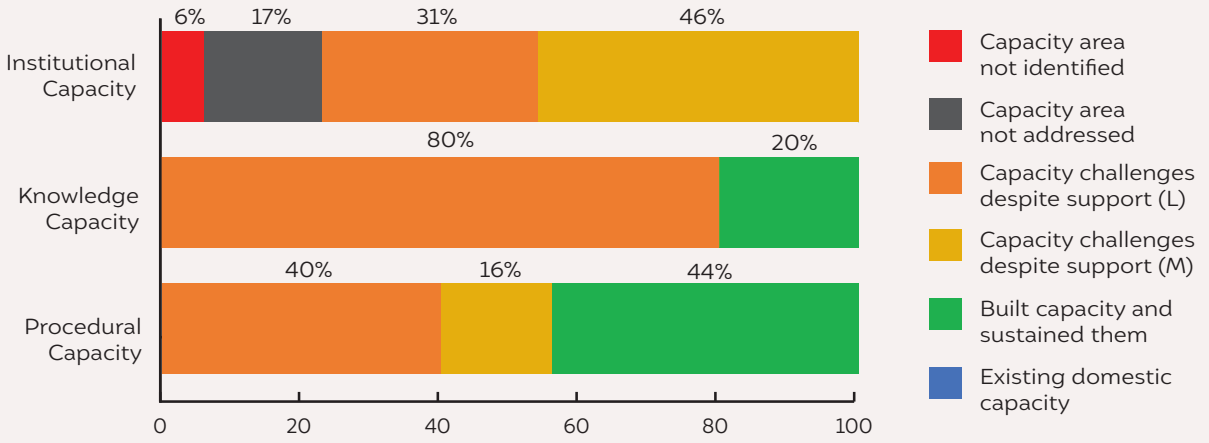
Built capacity and sustained them

- **Knowledge capacity:** Awareness about the GWP and tabular notation
- **Procedural capacity:** Outcomes of mitigation actions and CDM information

Table 3: Assessments and CBAM outcomes for mitigation

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of indicators showing high, moderate, and low capacity	**Needs assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional capacity		**71%**	**77%**
Knowledge capacity		**76%**	**100%**
Procedural capacity		**4%**	**81%**

CBAM outcomes



Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

6. Capacity associated with adaptation and vulnerability reporting

Institutional and knowledge capacity: At present, most adaptation actions under the NAPCC are implemented by the state government via the SAPCC. There are formal arrangements for monitoring and evaluation (M&E) of adaptation actions for each mission under the NAPCC. However, there are challenges in developing M&E templates and determining metric indicators that can help understand the outcomes of these actions. There is little clarity on the retention of knowledge to conduct vulnerability and adaptation assessments and other parameters. This is because of the project-oriented approach to reporting and the lack of processes that could facilitate knowledge transfer to future teams.

Procedural capacity: There is sound reporting on the impact of climate change and on climate vulnerable areas, even if some sub-national regions may not yet have been included in the submissions so far. This is relatable because India is amongst the most vulnerable countries to climate change, and its prime focus is to understand the climate impact and adapt to it. However, at present, there are inadequate measures to track progress or understand the outcomes of adaptation actions. Despite defined M&E procedures under the NAPCC, there is no regular reporting on domestic adaptation measures. In most cases, M&E is treated as a one-time activity, conducted on the basis of immediate needs and limited to a few parameters. Hence, the M&E procedures defined under these missions are yet to gain institutional support for report on the progress of adaptation actions.

Key highlights of CBAM outcomes for adaptation and vulnerability (Table 4)

Capacity area not Identified

- **Procedural capacity:** Outcomes of the M&E of the progress of adaptation actions and their effectiveness

Capacity area not addressed

- **Institutional capacity:** Formal procedure for undertaking adaptation assessment

Capacity challenges despite support (low capacity)

- **Knowledge capacity:** Awareness of tools and templates for M&E and indicators to quantify the outcomes of actions and understand their success
- **Procedural capacity:** Outcomes of adaptation assessment

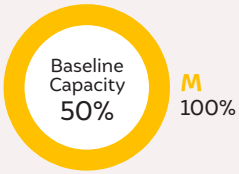
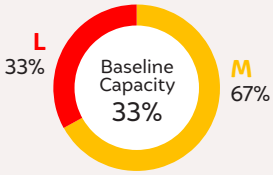
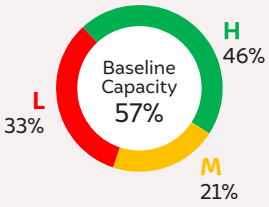
Capacity challenges despite support (moderate capacity)

- **Institutional capacity:** Formal arrangement for data collection and archiving systems; procedures to adhere to tools and templates; procedures to ensure budgetary support; and formal arrangements for M&E
- **Knowledge capacity:** Awareness to conduct vulnerability and adaptation assessments, develop an adaptation framework, and develop climate change scenarios for global climate change models
- **Procedural capacity:** Disclosures with respect to uncertainty in the methodology for assessments

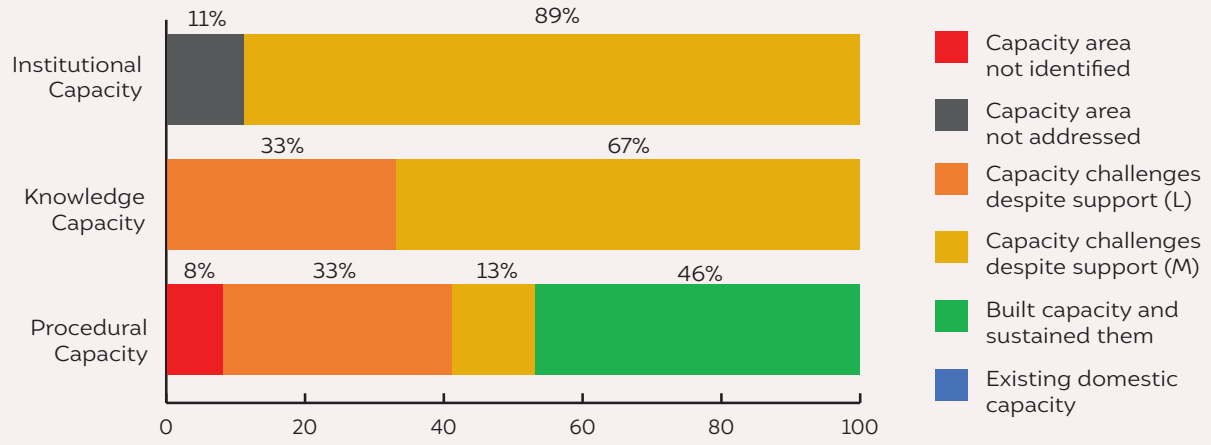
Built capacity and sustained them

- **Procedural capacity:** Analysis of potential impacts and vulnerabilities, disclosure on adaptation actions, and national programmes

Table 4: Assessments and CBAM outcomes for adaptation and vulnerability

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of indicators showing high, moderate and low capacity	**Need assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional capacity		69%	89%
Knowledge capacity		100%	100%
Procedural capacity		45%	92%

CBAM outcomes



Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

7. Capacity associated with means of implementation reporting

Institutional and knowledge capacity: The Department of Science and Technology, which falls within the ambit of the Ministry of Science and Technology, is responsible for the implementation of the National Mission on Strategic Knowledge for Climate Change (NMSKCC). The Climate Change Finance Unit under the Department of Economic Affairs of the Ministry of Finance deals with matters of climate finance. While institutional capacity already exists, there is also scope to enhance their existing mandates to evaluate impact and effectiveness of the support they receive from various bilateral and multilateral channels. Additionally, these ministries should explore opportunities to strengthen knowledge capacity by enhancing their understanding of the conceptual definition of climate finance, methods to quantify financial requirements with respect to the qualitative needs expressed, and the development of tools and templates to monitor the effectiveness of support they receive.

Procedural capacity: While disclosure on the means of implementation is very comprehensive, there are challenges in the establishment of clear needs that would bridge gaps and constraints. At multiple places, needs expressed in the communications are broadly stated and there is little clarity whether it refers to capacity building, financial support or technology transfer. The disclosure on the support received is very generic and does not reflect its effectiveness. There is a need to explore various databases (GEF, UNDP, GCF, AF) where support projects could be traced in order to provide detailed information on the areas of support received and progress made towards enhancing capacity.

Key highlights of CBAM outcomes for means of implementation (Table 5)

Capacity area not identified

- **Institutional and knowledge capacity:** Provisions that allow tracking of support received and the progress made for capacity building, technology transfer, and financial assistance; conceptual definitions and guidelines for climate finance and capacity building

Capacity challenges despite support (low capacity)

- **Procedural capacity:** Disclosure on the time frames associated with needs and progress made in past capacity building efforts

Capacity challenges despite support (moderate capacity)

- **Institutional and knowledge capacity:** Conceptual definition and guidelines for technology transfer
- **Procedural capacity:** Disclosure of capacity building, technology transfer, and financial support received; challenges faced during the implementation of support projects

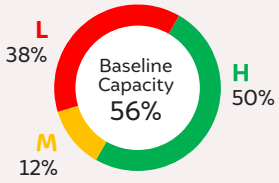
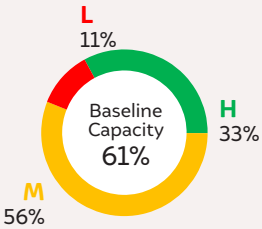
Existing domestic capacity

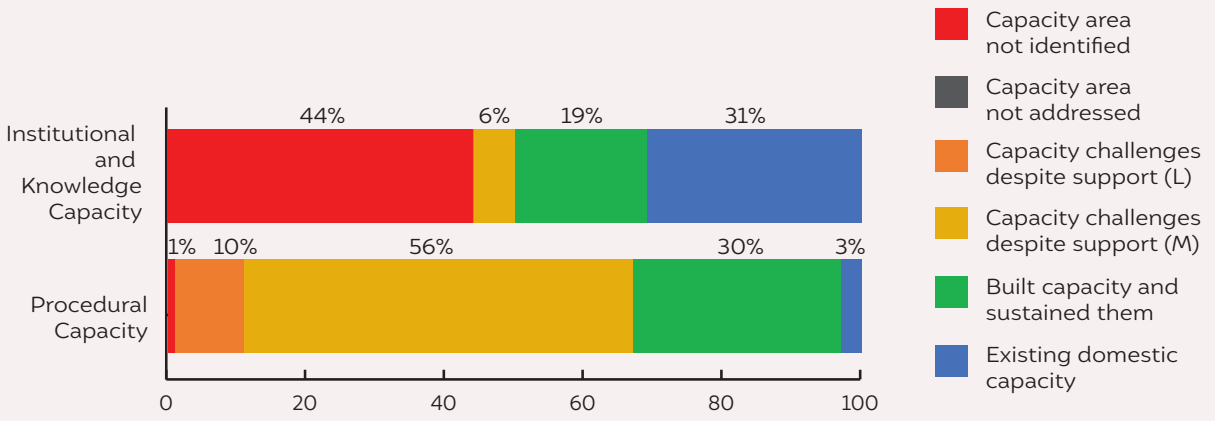
- **Institutional and knowledge capacity:** Formal arrangements such as defined roles and responsibilities for finance-related matters; provisions for stakeholder engagement processes
- **Procedural capacity:** Disclosure on finance needs not addressed

Built capacity and sustained them

- **Institutional and knowledge capacity:** Formal arrangements like defined roles and responsibilities for capacity building and technology transfer related matters
- **Procedural capacity:** Disclosure on data challenges – institutional, human, technical, and technological constraints. Disclosure on capacity building, finance, and technology transfer – needs and national priority

Table 5: Assessments and CBAM outcomes for means of implementation

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of indicators showing high, moderate, and low capacity	**Need assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional and knowledge capacity		0%	25%
Procedural capacity		0%	96%

CBAM outcomes


Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

8. Capacity associated with other areas of reporting: systematic observation

There exist several central government ministries and departments which undertake and coordinate climate change related research and enhance awareness across the country. In case of systematic observation or global climate change observing systems, there are dedicated institutions in India that monitor essential climate variables. The Indian Space Research Organisation (ISRO), National Physical Laboratory (NPL), National Environmental Engineering Research Institute (NEERI), Centre for Mathematical Modelling and Computer Simulations (CMMACS), National Institute of Oceanography (NIO), National Geophysical Research Institute, Council for Scientific and Industrial Research (CSIR), and many other institutions are involved in this process. This has resulted in reasonable capacity for most reporting areas for systematic observation.

Key highlights of CBAM outcomes for other areas of reporting: systematic observation (Table 6)

Capacity challenges despite support (low capacity)

- **Institutional and knowledge capacity:** Procedures for the collection and sharing of climate data; establishment of international data centres
- **Procedural capacity:** Disclosure of information on current climate changes

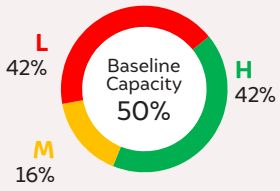
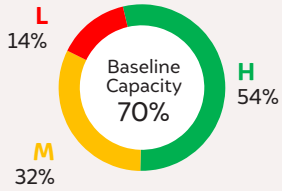
Capacity challenges despite support (moderate capacity)

- **Institutional and knowledge capacity:** Establishment of systems and networks
- **Procedural capacity:** Disclosure on terrestrial climate observing systems

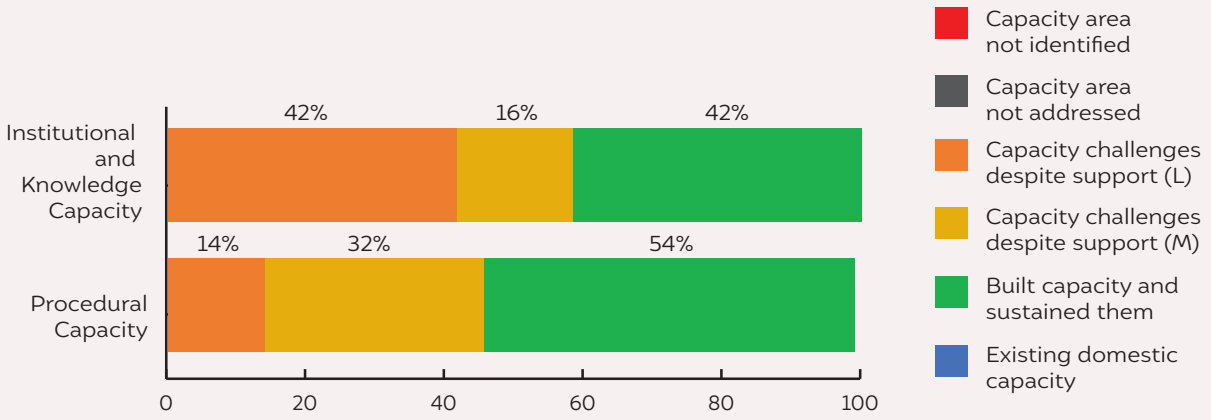
Built capacity and sustained them

- **Institutional and knowledge capacity:** Presence of national focal points, such as national programmes for essential climate variables
- **Procedural capacity:** Disclosure on atmospheric climate observing systems and ocean climate observing systems

Table 6: Assessments and CBAM outcomes for other areas of reporting: systematic observation

Assessment outcomes			
Capacity aspects	**Capacity assessment** Present baseline capacity and share of indicators showing high, moderate, and low capacity	**Need assessment** Share of capacity indicators for which needs are identified	**Support assessment** Share of capacity indicators for which support is received
Institutional and knowledge capacity		8%	100%
Procedural capacity		21%	100%

CBAM outcomes



Note: For capacity assessment, 'H' denotes high capacity; 'M' denotes moderate capacity; 'L' denotes low capacity
Source: Authors' analysis

9. Conclusion

It is important for India to not only bridge present capacity gaps but also to ensure that the domestic arrangements meet the newer reporting requirements under the Paris Agreement. Hence, India should complement its flexibilities towards enhanced transparency provisions with improvement plans that must be internationally supported and adhere to no-backsliding principles.

The most essential aspect of this improvement plan should be to internalise the reporting process through a formal, long-term arrangement and move away from a need-based, ad hoc, and project-oriented approach. This is because India has dedicated institutions for several economic areas across all levels of governance that collect and gather information. Internalising climate reporting would enhance inter-departmental synchronisation and coordination, and it will ensure timely reporting of authenticated data. The table below summarises the key outcomes of the CBAM assessment for India.

Consistent, comparable, and accurate climate reporting would lead to an effective stocktaking process. This can track global efforts to limit the global temperature increase to 1.5°C above pre-industrial levels. It would identify the gaps and areas of improvement between the aggregate effort of nations and scientifically prescribed limits. Hence, transparency in actions and support reflects global efforts and forms the basis of negotiations. In addition, transparency reports reflects each nation's commitment to the global community, which builds trust and confidence among the member nations. Hence, in order be in a climate leadership position, India should communicate its climate actions in the best possible way and showcase incremental progress towards enhancing its transparency capacity.

Table 7: Summary of CBAM outcomes

Areas of reporting	Strengths	Opportunities for enhancement	Enhanced intervention needed
Inventory	Presence of dedicated institutions (ministries and their departments)	• Strengthen NATCOM cell: act as a legal authority that can mandate other institutions to report on climate change • Develop templates to internalise reporting processes	• Formalise data collection processes – how to handle confidential data, timely reporting, data sharing responsibilities, and procedures to turn raw data to useful inventory data
NDC and NCs	Strong political willingness (ministerial-level committee)	• Projections on NDC with and without measures • Linking NDC with market mechanism	• Establish and strengthen national legal arrangements for NDCs (states vs. federal)
Mitigation	Interlinkages of domestic agenda with mitigation policies	• Methodology and assumptions: adopt best available methods to estimate emission reduction • CDM – role of national CDM authority for future market mechanism ITMOs	• Knowledge of mitigation assessments and templates • Strengthen MRV and formulation of NAMAs
Adaptation and vulnerability	Identification of vulnerable areas and national priorities	• Strengthening institutional arrangement: inter-departmental synchronisation	• M&E of adaptation actions: develop metric indicators to enhance the understanding on outcomes of actions • Outcomes of adaptation assessment
Means of implementation	Identification of needs: capacity building, finance, and support	• Explore opportunities to avail of support for technology needs assessment, implemented by the UNEP DTU Partnership, and develop a technology action plan	• Create provisions to monitor and track support received to understand its effectiveness

Source: Authors' analysis

References

GEF. (2019, January). *Projects*. Retrieved from https://www.thegef.org/projects

GoI. (2004). *India's Initial National Communication to the United Nations Framework Convention on Climate Change*. Retrieved from https://unfccc.int/resource/docs/natc/indnc1.pdf

GoI. (2012). *Second National Communication*. Retrieved from Government of India.

GoI. (2015, December). *First Biennial Update Report to theUnited Nations Framework Convention on Climate Change*. Retrieved from https://unfccc.int/resource/docs/natc/indbur1.pdf

GoI. (2018, December). *India's Second Biennial Update Report*.

IKI. (2019, January). *Projects, International climate initiative*. Retrieved from Federal Ministry for the Environment, Nature Conservation and Nuclear Safety: https://www.international-climate-initiative.com/en/projects/

The Hindu. (2018, December). *India 4th highest emitter of CO2: Study*. Retrieved from https://www.thehindubusinessline.com/news/global-emissions-india-4th-highest-emitter-of-co2-study/article25677626.ece

UNDP. (2019, January). *All projects*. Retrieved from http://www.in.undp.org/content/india/en/home/projects.html

UNFCCC. (2007). *Bali Action Plan*. Retrieved May 2019, from Decision 1/CP.13: https://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3

UNFCCC. (2014). Retrieved May 2019, from Decision 13/CP.20: https://unfccc.int/resource/docs/2014/cop20/eng/10a03.pdf#page=3

UNFCCC. (2019 (a)). *Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018*. Retrieved from https://unfccc.int/sites/default/files/resource/cma2018_3_add2_new_advance.pdf

UNFCCC. (2019 (b), May). *Capacity Building*. Retrieved from Background and history: https://unfccc.int/topics/capacity-building/resources/capacity-building-portal/history-of-the-portal

UNFCCC. (2019 (c), August). *Biennial Update Report submissions from Non-Annex I Parties*. Retrieved from https://unfccc.int/BURs

UNFCCC. (2019 (d), August). *National Communication submissions from Non-Annex I Parties*. Retrieved from https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-update-reports-non-annex-i-parties/national-communication-submissions-from-non-annex-i-parties

Stakeholder consultations informing the development of the Assesment Matrix

L to R (visible to the camera) Aman Gupta - Shakti Sustainable Energy Foundation; Damandeep Singh, CDP (formerly Carbon Disclosure Project); Subrata Chakrabarty, World Resources Institute (WRI); Ulka Kelkar, World Resources Institute (WRI); Elizabeth Gogoi, Oxford Policy Management India; and Sumana Bhattacharya, IORA Ecological Solutions.

Sumit Prasad (CEEW) presenting the framework idea at a stakeholder consultation to develop the assesment matrix.

Joydeep Gupta - The Third Pole, India Climate Dialogue.

Images: Riddhima Sethi/CEEW

COUNCIL ON ENERGY, ENVIRONMENT AND WATER (CEEW)

Sanskrit Bhawan, A-10, Aruna Asaf Ali Marg
Qutab Institutional Area
New Delhi 110 067, India
T: +91 11 40733300

info@ceew.in | ceew.in | @CEEWIndia